

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) An electroactive hydrogel composition comprising acrylamide; unsaturated aliphatic acid having the formula $R=CH-COOH$, wherein R is selected from the group consisting of $-CH_2-$, $-CH-COOH$, and $-CH-(CH_2)_n-COOH$, where n is an integer, or a combination of these aliphatic acids; a conductive polymer; and at least one cross-linking agent, wherein the hydrogel is electroactive in the absence of contact with electrodes and at a pH range of from about 3 to about 10.

2. (Original) The electroactive hydrogel composition of claim 1 wherein the unsaturated aliphatic acid is present in an amount of about 65 wt.%, of the total composition.

3. (Previously Presented) The electroactive hydrogel composition of claim 2 wherein the unsaturated aliphatic acid is acrylic acid, maleic acid, glutaric acid, or a mixture thereof.

4. (Original) The electroactive hydrogel composition of claim 3 wherein the conductive polymer is a polypyrrole-carbon black composite.

5. (Original) The electroactive hydrogel composition of claim 4 wherein the polypyrrole-carbon black composite is present in an amount of about 4 wt.% of the total composition.

6. (Original) The electroactive hydrogel composition of claim 1 wherein the hydrogel comprises about 65 wt.% acrylic acid.

7. (Original) The electroactive hydrogel composition of claim 6 wherein the hydrogel comprises about 4 wt.% polypyrrole/carbon black.

8. (Cancelled).

9. (Currently Amended) The electroactive hydrogel composition of claim 1 further comprising a therapeutic, ~~prophylactic~~ or diagnostic agent.

10. (Currently Amended) A drug delivery device for controlled delivery of a therapeutic, ~~prophylactic agent or~~ diagnostic agent to an animal comprising an electroactive hydrogel composition comprising acrylamide; unsaturated aliphatic acid having the formula $R=CH-COOH$, wherein R is selected from the group consisting of $-CH_2$, $-CH-COOH$, and $-CH-(CH_2)_n-COOH$, where n is an integer; a conductive polymer; and at least one cross-linking agent, wherein the hydrogel composition is electroactive over a pH range of from about pH 3 to about pH 10, in the absence of contact with electrodes, and in the presence of an electric energy source of from about 1 to about 5 V.

11. (Original) The drug delivery device of claim 10 wherein said device is implantable.

12. (Original) The drug delivery device of claim 11 wherein the device is a microvalve.

13. (Currently Amended) The drug delivery device of claim 12 wherein the device further comprises at least one reservoir containing the therapeutic, ~~prophylactic or~~ diagnostic agent, and wherein application of an electric current to the device causes the microvalve to intermittently release the therapeutic, ~~prophylactic~~ or diagnostic agent from the reservoir.

14. (Previously Presented) The drug delivery device of claim 10 wherein the unsaturated aliphatic acid comprises about 65 wt.% acrylic acid.

15. (Previously Presented) The drug delivery device of claim 14 wherein the hydrogel composition comprises about 4 wt.% polypyrrole-carbon black.

16. (Cancelled).

17. (Original) The drug delivery device of claim 9 wherein the device is implantable.

18. (Cancelled).

19. (Currently Amended) A method for delivering a therapeutic, ~~prophylactic~~ or diagnostic agent to a patient comprising

(a) applying on or implanting in the patient a drug delivery device comprising an electroactive hydrogel comprising acrylamide; unsaturated aliphatic acid having the formula $R=CH-COOH$, wherein R is selected from the group consisting of $-CH_2$, $-CH-COOH$, and $-CH-(CH_2)_n-COOH$, where n is an integer; a conductive polymer; at least one cross-linking agent; and a therapeutic, ~~prophylactic~~ or diagnostic agent; and

(b) activating the delivery device by applying a current of 40 mA or less, wherein electroactuation of the hydrogel results in release of the therapeutic agent, ~~prophylactic~~ agent or diagnostic agent from the drug delivery device.

20. (Original) The method of claim 19 wherein the electric field is applied at a predetermined cycle of positive and negative voltage.